

THE SURVEY - PART 4

by Buzz Rudow

A few more responses came in this month, so we're up to a 33% return rate. Pretty good. This month we begin with question 6.

6. What Database do you use?

Database Managers are in the software libraries of 68.8% of the members. Some people use Execuplan and Super Calc (spreadsheets) and Memorite (word processor) as database managers. I didn't count them for this survey, however.

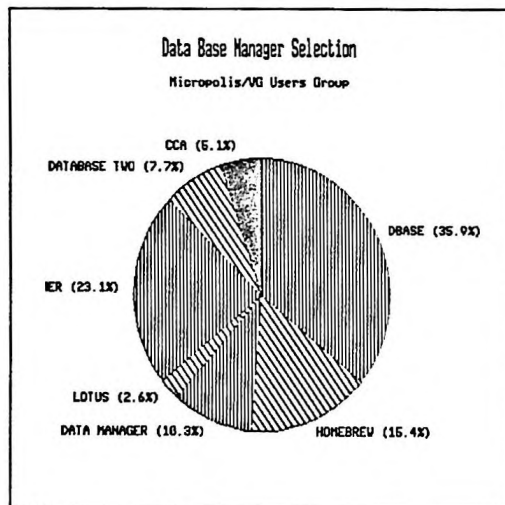
The percentage of users having the most popular databases is:

dBase II/III	35.9%
Home Brew	15.4%
Data Manager	10.3%
Database Two	07.7%
CCA	05.1%
Lotus 1-2-3	02.6%
Other	23.1%

Included among the "other" category are Data Flex, Info Master, MDBS, Proprietary, Smart, Nutshell, Data Star, Rbase5000, Condor III, and Info Star.

Database Two is an MDOS-only system, the Home Brew and CCA could be MDOS or CPM, Lotus and Rbase5000 are MS-DOS programs, and I assume all the others are CPM-only programs. Data Manager is the Vector Graphic supplied database manager.

Graphically, the program distribution among members looks like this:



I've still never used a database manager to produce anything, though I've renewed my aim to learn by dabbling in Rbase-5000 on MS-DOS. My bias is that they are slow in execution, limited in ability and difficult to modify. But that's a bias, not exactly a belief, and certainly not a fact. The redeeming feature is suppose to be ease of application generation. Yet I've always quit playing with them before I got an application completed. Seems to me that database managers are still a programming language, and a language in which I don't know how to program.

dBase certainly would look like the "standard", but we Muggies aren't too impressed with "standards", or we wouldn't be running Vectors, or Micropolis 77-track drives.

I'm not even sure how database systems work. Do you have to have a copy of the program to make the application work, or can you create a COM file, as with Basic/z? There aren't any applications for commercial database managers in the MUG library, so I assume the former.

This seems like a good area for an article from someone who has done some investigation. What do you do with a database manager? Is there a "best" one? Why, and how, do the various managers differ - speed, ease of use, transportability?

7. What type communication s/w do you use?

The percentage of members having communications software is 62.5. The breakdown of the various packages follows.

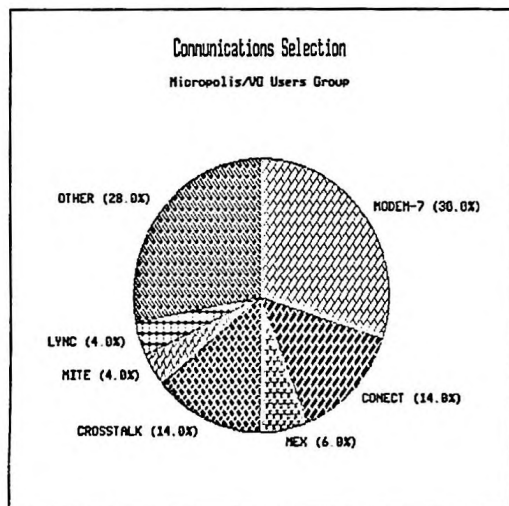
Conect	14.0%
Modem7	30.0%
MEX	03.0%
Cross Talk	14.0%
MITE	04.0%
LYNC	04.0%
Other	28.0%

The "other" category includes VCOM, COMMX, BITCOM, SMART, HOMEBREW, Smartcom, Hyper Access, AT&T Comm Manager, SmartTerm, IMP and ASCOM. Conect, and possibly also LYNC for the newer systems, is the Vector Graphic supplied communications software. There was no MDOS Comm program mentioned, except for perhaps some of the Homebrew. There is a Micro-Link program which works on some of the MDOS machines.

I think it's a little more clear why the distribution is what it is on the communications programs. Conect is high because the user didn't have to fool with it. The dealer totally installed it. Cross-talk is probably high because it is a "name" program, having a good reputation, and has pretty good documentation, making user installation manageable. Modem-7 is high because it's free and powerful. Installation is somewhat more difficult for the user.

There probably are also some plusses and minuses in the programs mentioned here. For instance, BITCOM and SmarTerm (in MS-DOS) can emulate a DEC VT-100 terminal. I don't know of any terminal emulation in the CP/M programs. Does MEX? The comparison of MEX and Modem7 sounds like a good potential article. MEX has both public domain and commercial versions.

Graphically, here's the picture:



8. What areas of interest would you like to see covered in the Newsletter?

Ah... Finally we get to the real "guts" of the survey. Wha' d'y'all wa't, as they say down here in Alabama. Sixty-five percent of the respondents answered this question. I suppose I can assume that the other 35 percent like the newsletter the way it is. After all, they took the time to answer some of the questions and return the form. Why wouldn't they have made a comment here?

As one might imagine, answers were varied. After studying them for awhile, I decided to group them in five areas. Those areas, and the percentage of people interested in the area, are:

General User Assistance	43%
System Enhancement	18%
System Understanding	14%
Programming	16%
MS-DOS	9%

GENERAL USER ASSISTANCE

The types of comments grouped under Area 1 are: Explain how the system operates. How do I use it? What software is available to "plug in"? How do I

keep it running? What are its capabilities? Tell about new software, utility programs, business software, public domain software, software for ham radio, unusual applications for the computer, and, yes, even about Spellbinder. Explain how to manage a hard disk. Relate user experience with hardware and software problems. Tell about maintenance facilities.

Also included here are requests for less technical material, a question and answer column, and a classified section. While the majority of the comments related to Vector Graphic and CP/M, there were also references to MDOS and other types of computers.

I'd like to think that the newsletter has tried to service the above sort of requests. We surely haven't done as well as we could. One problem, often mentioned before, is that I can't, or won't, do it all. I don't personally own all the various hardware and software that everyone in the group has. While the newsletter can print the questions that members have, I don't have all the answers. There's a tendency for little response from the membership on the questions. Does anyone have a solution to suggest?

SYSTEM ENHANCEMENT

I interpret Area 2 to be requests for: How can I make the basic system better? Give us a "cookbook" for enhancing, or upgrading our system.

Typical of the comments allocated to Area 2 are requests for information on how to purchase and install a RamDisk, for suggested improvements in the CP/M operating system in terms of speed, hard disk, and controller, and questions such as - can a Seimens 8" disk drive be made to work on a VG. Also included in this area are the more standard software enhancements, such as installing ZCPR.

The newsletter hasn't done as well in servicing these requests and it has for Area 1. The biggest reason is that I haven't done any of them, and those of you who have, aren't telling us about your endeavors.

SYSTEM UNDERSTANDING

Area 3 is a kin to Area 2, only deeper in depth, more technical. How does the operating system work? Explain software modifications specifically. Actually, someone has to accomplish this sort of Area-3 research before anyone can create an Area-2 cookbook.

Included in Area-3 comments are requests for modifications to CP/M BIOS, MDOS details, CP/M disk driver additions, speed-ups, etc. Also asked for are explanations of VG CP/M, including source code listing. At the far end, technically, are requests for discussions and explanations of operating system and compiler design, in general.

PROGRAMMING

About two-thirds of the comments were requests for articles about programming in Basic. The other third wants to hear about assembly language programming. About two-thirds of those interested in Basic are really interested in MDOS Basic. It seems that the CP/Mers don't program, or program in some other language and don't need this newsletter to aid them.

Four years ago, the newsletter must have suited this portion of the membership just fine. We mostly wrote about MDOS Basic. I haven't done much lately. The reason is partly because I didn't think there was much interest, and partly because I don't use MDOS Basic anymore. Everything I write is in Basic/z.

Since this area is a sizable portion of the readership, I'll have to think of ways to bring some programming back into the newsletter.

MS-DOS

Last, and also least, were the Area 5 requests for MS-DOS related articles. The types of comments ranged from "anything to do with MS-DOS" to "some good gripes about how MS-DOS has stolen our fun". Perhaps we can run some parodies of the latter type, but I surely don't intend this newsletter to become an MS-DOS organ. It does seem reasonable to try and respond to requests for articles on converting programs from VG format to PC format, and for information on what MS-DOS software will run on the later-day Vectors, however.

...

I have some thoughts on how we might make the newsletter a better publication for most of you. Since I haven't gotten my thoughts worked out, and I'm already late in publishing for this month, they'll have to wait. If, however, any of you wish to speak of your opinions on a solution, please write me. Remember, at this point I'm not asking what you want in the newsletter. We've just discussed that. What I want is to know how we're going to accomplish the furnishing of the types of information requested.

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SDP UPDATE

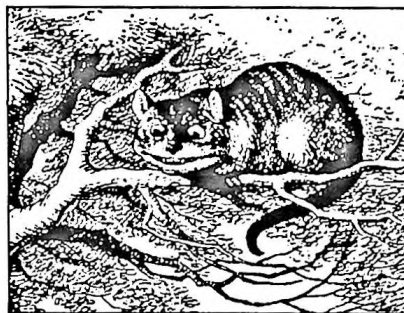
I suppose you've noticed the pie charts and bar graphs that have been in the last two months of the newsletter. They were produced by the latest SDP release, version 6.2.

There are three versions of Spellbinder, the basic package, Scientific Spellbinder, and Spellbinder Desktop Publisher (SDP).

SDP now includes graphic capabilities, style sheets, and batch printing. For your graphics needs, version 6.2 has interfaces to Lotus (used to print the charts and

graphs), and PC Paintbrush (to design your own pictures, or modify the screen of another graphics program). The "coloring" of this month's charts was done with PC Paintbrush.

Even more impressive is the ability to use the output of Datacopy's scanners to digitize photos and pictures. All these graphics can be scaled, appear on the screen in the preview mode, and are printed at 300 d.p.i.



(1)

Scaled images from the Datacopy scanner may be sized to fit any area you specify. Above (1), the entire graphic fills the box. Below left (2), the cat was cropped and shrunk in size; below right (3), the cat is enlarged 50%.



(2)

(3)

SPELLBINDER (basic)

Some of you may not currently need the power to produce mathematical and chemical formulas, or to do publishing-type page layouts. If so, then the basic Spellbinder is the package for you. Spellbinder does so many things, such as math functions, sorting, and forms handling, that Lexisoft calls it an Office Management System. Basic Spellbinder is available as a menu-configurable program for most terminals, including memory-mapped devices such as Vector Graphic, Exidy, and SOL.

A very important fact is that basic Spellbinder is the underlying program for the two advanced versions.

When and if you trade up, there's no retraining necessary in the basic wordprocessing department. And you can trade up. Files can also be passed between different operating systems without problem, because the Spellbinder file structure remains the same.

Basic Spellbinder lists for \$495. DAMAN sells it for \$325, plus shipping. Trade-ups from the CP/M version to the MS-DOS version cost \$55.

SCIENTIFIC SPELLBINDER

Scientific Spellbinder has the additional ability to draw complicated mathematical and chemical formulas. Scientific Spellbinder is only available as an MS-DOS program, and only for the Hewlett Packard 150, the Data General One, and IBM-COMPATIBLE computers. Numerous printers are supported.

Scientific Spellbinder lists for \$790. DAMAN sells it for \$620, plus shipping. Trade-ups from basic Spellbinder (CP/M or MS-DOS) cost \$320.

SPELLBINDER DESKTOP PUBLISHER (SDP)

SDP requires a PC compatible with a graphics board (now available for the IBM color adapter and monitor, EGA, Hercules, HP Vectra Multimode, and AT&T 6300 high resolution) and a laser printer (Hewlett-Packard LASERJET Plus, LASERJET Plus 500, LaserMaster, OASYS Laserpro 810 and 1510, or any other printer that can emulate the LASERJET Plus). It also requires Hewlett-Packard's downloadable soft fonts.

This newsletter is produced by SDP, and I try and use some of the SDP capabilities, as evidenced above, just to show off. In case I've never made it clear, the printing of all the pages of this newsletter is done in a single pass on a blank piece of paper. No cutting and pasting. All headers, dividers, columns, pictures, charts - everything - comes out just as you see it, either to paper or to the screen. I really do love it.

Spellbinder Desktop Publisher lists for \$695. DAMAN sells it for \$525, plus shipping. Trade-ups from basic Spellbinder (CP/M or MS-DOS) cost \$270.

IN CONCLUSION

Included in the price is phone and mail support from DAMAN. If you have problems with an application, you are encouraged to send us a disk with typical data, and a description of what you're trying to do. We'll set it up for you and return your disk.

You can call Lynn or me for more detailed brochures on any of these packages. You can also order any of the manuals. For \$45 you can see all the commands and lots of examples. The cost of a manual is deductible from the cost of a full Spellbinder version.

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VECTOR SELLS SERVICE BUSINESS

Vector Dealers received a letter from Roger Lee, Executive Vice-President of Vector Graphic, Inc., which informed them that continued support to Vector users was assured.

According to Mr. Lee, "Effective the 8th of September, 1986, Vector Graphic has sold its on-going service and support business (including the sale of spare parts, upgrades, add-ons and additional systems) to Service Intelligence Corp. The sale includes all of the remaining Vector assets required to provide continued and uninterrupted support for the Vector Products."

"Service Intelligence Corp.'s primary business is in the areas of service and support for mini/micro computer systems. I am hopeful that Service Intelligence Corp. will effectively provide service for Vector Products in the coming years. Service Intelligence Corp. may be reached at either the current Vector number (818) 707-2180, or at (818) 707-1377."

Included with Mr. Lee's letter was a press release from Lawrence H. McGovern, President of Service Intelligence Corp., located at 5655 Lindero Canyon Road, Suite 221, Westlake Village CA 91362.

According to Mr. McGovern, "the acquisition of Vector's service and support business will increase the life expectancy of the installed base of Vector Products. Vector Systems perform well and are reliable."

McGovern adds, "Now that support is assured, there is no reason for Vector users to replace these systems. If the system is satisfying the user's processing requirements, why change? After all, users are comfortable with the system operation and all of their data files are in Vector format."

Service Intelligence Corp. will, in addition to providing on-going depot level support, work with Vector dealers in providing on-site support to Vector users; either through their own dealer organization, or through PC ServNet - Service Intelligence Corp.'s nationwide network of independent service companies. PC ServNet currently provides on-site service in over 150 locations, coast to coast, including Alaska and Hawaii.

Owners and/or Users of Vector Products should contact either Mr. Ernie Schroer or Mr. George Greenspon at Service Intelligence Corp. for more information concerning the support of Vector Products.

A bulletin edition of the Vector Users' Group Midwest, produced by Roger Groth, quotes McGovern as saying "We want to work with users and dealers to identify the needs of the marketplace, and will be happy to try to fill them. Our intent is to keep service and support available for Vector systems for at least the next 3-5 years."

"We need feedback from end-users and dealers regarding the kinds of additional support they want, such as the correction of bugs and/or software updates. We'll do whatever we can to make corrections -- we've acquired the services of a couple of Vector's former technical support employees -- but we do not plan to re-write entire packages or operating systems."

Jeff Bowman, of Al Brandli and Associates, said that "Here at ABA we have been experiencing no problem in our service and support of Vector Graphic products. It does seem very positive that Service Intelligence Corp. will continue to help us help you."

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LETTERS

CP/M SYSTEM HACKERS ARISE!

Buzz: Over the years I have made some small temporary patches to the BIOS of my Vector 3 to allow access to the *Shift-uparrow* and *Shift-downarrow* or to obtain a "|" (vertical bar) in certain utilities or programs.

Recently my ambitions have grown. I'd like to burn a new monitor PROM to allow "|", *Shift-arrows*, and perhaps perform other goodies: e.g. video kill-line and open line. For this I need the help of someone with a PROM burner. Who has one attached to a Vector system so the code can be transferred on disk?

I would also like to add a ram disk to my system and give ZCPR3 a try. But it turns out that there are some problems with this sort of thing. You see, Vector put out its CP/M machines with a "modified BDOS-BIOS".

Here is a case in point. The BIOS Write-to-Disk routine receives a value in the C register that effects its handling of the call! Also, for reasons I do not yet understand, a ram disk routine patched into the BIOS jump table causes an error in the BDOS at the point that the BDOS finishes writing to the first track.

Disassembling the BIOS for answers is a real chore. Program flow isn't too bad. But some of those flags and temporary storage areas are very difficult to figure out.

Another annoying point with the Vector system is that the 1K user patch area above the ROM is not totally free. Various places in the middle of this area are used by the PROM for its work. I have this narrowed down to a hundred bytes or so used during normal operations. Avoiding these bytes greatly improves the function of patched-in routines. A clearer picture of the PROM use of this area is needed in order to get the most use out of it for ZCPR3 or anything else.

I have been reading this newsletter for years and have seen next to nothing about this kind of thing. Still, I

suspect others are interested. I wouldn't be surprised if some of you have solved one or two of these problems. Does someone have a copy of the BIOS source? That would help a lot.

Please contact me if you are interested in cooperating on any of the following projects. Better yet, let me know if you have solved any of them, or if you have resources to offer to a project, e.g., a PROM-burner or answers based on the BIOS source. I will be glad to help share the results around.

Proposed Projects:

1. Disassembling the BIOS. Perhaps you'd like a copy of my latest attempt (awwwk!).
2. Installing ZCPR3. Or would you like a copy once the work is done?
3. Installing ZRDOS or P2DOS, a public domain BDOS replacement.
4. Installing a ram disk. Do you have one working? Would you like to get one if you know it could be done?
5. Modifying the monitor PROM.

David Vergin, 112 Hillcrest, Elma WA 985541.
Phone (206) 482-3375

BUZZ'S FAUX PAS

Buzz: I fear that my inarticulation has placed us in the position of having egg on our respective faces: MEMINDEX and MEMDEX were not meant to be released as public domain programs! They were sent simply for your preview of what I was working on, for review and comment only.

I just received Newsletter #74 announcing the inclusion of those programs on Disk #1918, and had a small panic attack. My copy of the transmittal disk eludes me at the moment, so I cannot review it to see how the error in understanding was made: but I suspect that I just did not make the purpose of those submissions clear - relying upon the Copyright Notice as sufficient to indicate that I was not releasing the program into the public domain.

Sorry that this embarrassment to both of us has occurred. I hope you do not mind terribly withdrawing those two MEMxxx programs from the Library disk and announcing the error. The other truly public domain programs -- SAVExxx, FIND and SB, as well as the information on ICEX (which, incidentally, will not load properly under my CP/M 2.22H, but which runs beautifully on my Kaypro 2X) should justify the Library disk anyway.

Edward W. King, P.O. Box 787, Ithaca NY 14850.

Ed- Consider it done. I am truly sorry I didn't understand your intent. You've been a great contributor to the group. Hope I didn't cause any lasting irritation and that we can count on your continued support.

MICROPOLIS/VG USERS GROUP Newsletter #75 October 1986

NOTICE TO DEALERS

As a service to its members, the MUG newsletter will include, in fact solicits, commercial advertisements relevant to members' needs. Any dealer, vendor, or service organization wanting to advertise must provide sufficient full or double page material, or must reimburse the MUG for reproduction of a single master.

CLASSIFIED

The Classified Section of the MUG Newsletter is available to all users, free of charge. Just call or write us with a description of what hardware, software, information, etc., that you want to obtain, or dispose of.

FOR SALE - One Vector Graphic Model 2600, 64K memory, two 630,000 byte 5 1/4" floppy disk drives, and one NEC letter quality printer. Equipment is in excellent condition. Make offer.

J. Micheal Vaughn, Allen, Davis & Vaughn, Certified Public Accountants, Third Floor, 222 Third Avenue

North, Nashville, TN 37201. Phone (615) 244-8666.

WANTED - Execuplan II (an official disk, not a copy), an external PROM burner with RS232 interface, a tractor and/or Centronics parallel interface board for a C. Itoh FP-1500 printer.

David Vergin, 112 Hilcrest, Elma WA 98541. Phone (206) 482-3375.

MICROPOLIS/VECTOR GRAPHIC USERS GROUP NEWSLETTER

Published monthly by DAMAN, 604 Springwood Circle, Huntsville AL 35803-1740. Subscription rates: North America; \$18/year. Elsewhere; \$25/year, airmailed.

For assistance with general information, MUG/Vector Graphic, Micropolis drives & parts, call Lynn at (205) 881-1697 during the Central Times of 9AM to 5PM. Buzz is sometimes around in the evening (Lynn will know) and from 9-12 on Saturday.

MICROPOLIS/VECTOR GRAPHIC
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- USED Vector 4/20 or 4-S/20 Computer** - 2 630K V3 and MZ compatible hard sector drives, 128K RAM and CP/M-86. MD-DOS optional. Retail for \$4,495. Sale price \$995.
- * **USED Vector 4/30 or 4-S/30 Computer** - 1 630K V3 and MZ compatible hard sector drive, 5Mb hard disk, 128K RAM and CP/M-86. Retail for \$5,495. Sale price \$1,295.
- * **USED Vector 4/40 or 4-S/40 Computer** - 1 630K V3 and MZ compatible hard sector drive, 10Mb hard disk, 128K RAM and CP/M-86. Retail for \$6,495. Sale price \$1,495.
- * **USED Vector System B or MZ Computer** - with 64K and 300K disk drives, and Mindless Terminal or Hazeltine 1500 CRT. Originally was \$6,495. Sale price \$795. \$995 with new terminal. Some customers have purchased an extra one of these just to have the spare parts.
- USED Vector 2600 Computer** - with 64K and 2 630K hard sector drives. Retail was \$3,995. Sale price \$1,295.
- USED Vector 3005 Computer** - with 64K, one floppy and a 5Mb hard disk. Retail was \$5,995. Sale price \$1,495.
- USED Vector 3010 Computer** - with 128K, one floppy and a 10Mb hard disk. Sale price \$1,695.
- USED Vector 5005 Computer** - with 128K, one floppy and a 5Mb hard disk. Can accommodate up to four add-on terminals (see below). Retail was \$6,250. Sale price \$1,595.
- USED Vector 5010 Computer** - with 128K, one floppy and a 10Mb hard disk. Can accommodate up to four add-on terminals (see below). Retail was \$6,750. Sale price \$1,795.
- * **USED Vector 5032 Computer** - with 128K, one floppy and a 32Mb hard disk. Can accommodate up to four add-on terminals (see below). Retail was \$11,995. Sale price \$1,995.
- * **ALMOST NEW Vector 5032E Computer** - with 128K, one floppy and a 32Mb hard disk. Vector 4 style enhanced video and detached keyboard. Can accommodate up to two add-on terminals (see below). Retail was \$11,995. Sale price \$1,995.
- * **NEW Vector VSX-3000** - 1 720K IBM compatible soft sector drive, 10Mb hard disk, 128K RAM, CP/M-86 and MS DOS. Retail for \$5,995. Sale price \$2,495.
- * **NEW Vector VSX-5000** - 1 720K IBM compatible soft sector drive, 36Mb hard disk, 128K RAM, CP/M-86 and MS DOS. Retail for \$9,995. Sale price \$2,995.
- * **NEW Vector VMX-5000** - 1 720K IBM compatible soft sector drive, 36Mb hard disk, 640K RAM, CCP/M-86 and MS DOS. A one station multi-user, multi-tasking system (with expansion capabilities to four stations at \$495. each station). Sale price \$3,495.

PRINTERS

OTHER PRINTER BRANDS - we can get most printers on the market including Epson, Okidata, NEC, Diablo and Texas Instruments. Call Jeff for current prices.

USED Diablo P38 High Speed Dot Matrix Parallel Printer - 400 CPS. Very fast (4-5 lines per second). Includes cable. Sale price \$1,195.

USED Vector 7700 Letter Quality Printer - 55 CPS for V3 or V4. Comes with forms tractor & cable. Retail for \$3,150. Sale price \$995.

USED TI810 Fully Enhanced Dot Matrix Printer - includes tractor. A fast 150 CPS. Known for high reliability. Has excellent letter quality and compressed print. Sale price \$995.

NEW TI865 Dot Matrix Printer - includes tractor. 150 CPS. Uses 14 7/8" wide paper, has compressed print. Plug-in cartridges provide the best near-letter quality available in the industry. Sale price \$795.

SOFTWARE

IBM SOFTWARE - we can get most all software for IBM or IBM compatibles. This includes all available wordprocessors, spreadsheets and databases. Call Jeff for current prices.

WORDPERFECT 4.1 - The absolute finest wordprocessor available for IBM and compatibles. Retail for \$495. Sale price \$349

* **MAILPLUS** - Enhancement to Memorite Mail List Program you've been waiting for. Retail for \$199. Sale price \$99.

Vector 4 Memorite III Reference Guide (new) - Price \$36.

Vector 4 Memorite III Tutorial Approach Guide (new) - Price \$24.

Vector 3 Memorite III Tutorial Approach Guide - Vector 3 version. Price \$19.

* **DateMaster** - calendaring and appointment software for the Vector 4 or Vector 3, 5 or 5E with extended CP/M. Retail for \$295. Sale price \$45.

DataManagr - data base management software. Retail for \$495. Sale price \$149.

TIM III - data base management software. Retail for \$495. Sale price \$149.

* **CONNECT** - communications software from Vector. Retail for \$150. Sale price \$49.

DBASE II - data base management software. Retail for \$495. Sale price \$395.

MOVE-IT - communications software (the best). Sale price \$175.

Peachtree Accounts Receivable, Accounts Payable, General Ledger, Payroll and Inventory Control Modules - Retail for \$595. per module. Sale price \$195.

Memorite III - word processing software. Retail for \$450. Sale price \$95.

ExecuPlan II - electronic spreadsheet. Retail for \$195. Sale price \$49.

Accuchart - business chart plotting on Vector 7700 printers and other letter quality and dot matrix printers. Retail for \$295. Sale price \$95.

V4 CP/M-86 - includes Vector 4 CP/M-86 programming manual and disk. Retail for \$150. Sale price \$25.

C Language Compiler, Lattice 2.12 (CP/M-86 ver.) - with manual. Sale price \$195.

EXPANSION HARDWARE

USED Vector Tape Backup - for 5005, 5010, 5032, 1600, 2600, 3005, 3032 (all Vector 3's) and Vector 4/4S. Retail was \$2,995. Sale price used \$995. New \$1,895.

Hard Disk Upgrades - add a 5, 10, 32 or 36 megabyte hard drive to your single or dual floppy computer (1600, 2600, 4/20, etc.). Replace the drive in your 5 megabyte computer (3005, 5005, 4/30, etc.) with a 10 megabyte drive. Call for a price quote.

5005, 5010 or 5032 Add-on Terminals - includes 64K RAM. Retail for \$1,685. Sale price new \$695. Used \$495. Also NEW "E" series at \$895.

Wyse 75 CRT - for VMX multi-user and most non-Vector computer systems. Includes cable. Retail for \$845. Sale price \$495.

Hazeltine 1500 CRT - includes cable. Sale price \$99. Can be used with a modem to communicate with a remote Vector.

USED Sheetfeeder for Qume Sprint 3 Printer - Retail was \$1,295. Sale price \$195.

Vector 3 Extended CP/M Upgrade - convert your Vector 3 to a 128K system. Retail for \$650. Sale price \$400.

USED Hard Sector Floppy Drive - upgrade your single floppy Vector 3 (VIP or 1600) to a dual drive 2600. Reduces floppy backup hassle and adds utility and capacity to, e.g., Memorite III. Retail for \$1,200. Sale price \$495.

USED Dual Drive Unit - upgrade your System B or MZ to 3 or 4 drives. Sale price \$295. per extra drive.

NEW Oxford Copy Holders - Retail for \$40. Sale price \$15.

Turntable - position your computer for comfort for yourself or turn around to that other user. Retail for \$45. Sale price \$18.

SUPPLIES

Continuous Tractor Feed Paper - 12" x 8 1/2" tears down to 8 1/2" x 11", fits in your printer as 11" wide and 8 1/2" length instead of the 8 1/2" wide and 11" length. NCR (carbonless) 3-part \$10./box. Plain (normal) 1-part \$10./box.

Ribbons, Diskettes and Paper - call Jeff for prices.

QUANTITIES ARE LIMITED SO INQUIRE NOW BY CALLING (714) 754-6363.